

Name: _____



Carbon dioxide (CO₂) is a naturally occurring greenhouse gas which helps trap the sun's heat on earth, keeping our planet a comfortable temperature. Our use of fossil fuels for energy releases excess CO₂ and is causing climate change.

You can calculate your personal "carbon footprint", or the amount of CO₂ emissions that you and your family create through daily life: heating your home, using electricity, and by driving. You can also find ways to reduce your carbon footprint on back of this page.



ENERGY USE AT HOME



Heating Fuel: select the type of fuel used in your home and fill in below

Emission factors

Propane: 12.8 lb CO₂/gal, #2 Heating Oil: 22.4 lb CO₂/gal, Natural Gas: 12.6 lb CO₂/therm¹ Wood: 0 lb CO₂/cord* *burning wood releases the net CO₂ that trees take in CO₂ when they grow*

| | | | | | | | |
|-----------|-----------------------------------|---|---------------------------------------|---|-------------|---|---------------------------------|
| | _____ | × | _____ | × | 12 | = | _____ |
| fuel name | gallons or therms used monthly | | emission factor for fuel type used | | months/year | | pounds CO ₂ /year |

Electricity Use: check your homes last electric bill for the Kilowatt hours (kWh)

| | | | | | | |
|---------------------------------------|---|----------------------------------|---|-------------|---|---------------------------------|
| _____ | × | <u>0.9 lb CO₂/kWh</u> | × | 12 | = | _____ |
| kWh used/month (see electric bill) | | Avg. New England Emission factor | | months/year | | pounds CO ₂ /year |



TRANSPORTATION ENERGY



gasoline

| | | | | | | | | |
|------------------------|---|--------------------|---|-----------------------------------|---|-------------|---|---------------------------------|
| _____ | ÷ | _____ | × | <u>19.5 lb CO₂/gal</u> | × | 12 | = | _____ |
| Miles driven/ month | | miles/gal (mpg) | | Gasoline emission factor | | months/year | | pounds CO ₂ /year |

diesel

| | | | | | | | | |
|------------------------|---|--------------------|---|-----------------------------------|---|-------------|---|---------------------------------|
| _____ | ÷ | _____ | × | <u>22.4 lb CO₂/gal</u> | × | 12 | = | _____ |
| Miles driven/ month | | miles/gal (mpg) | | Diesel emission factor | | months/year | | pounds CO ₂ /year |

To determine mpg use the equation below or check online:
(miles traveled ÷ gallons used = mpg) , <http://www.fueleconomy.gov/feg/sbs.htm>

TOTAL HOUSEHOLD CARBON FOOTPRINT: _____

pounds CO₂/year



REDUCING YOUR FOOTPRINT

Carbon footprints can be reduced significantly by making small changes in the way we live our lives. These changes add up, and do make a difference! If everyone reduces their emissions by 2% every year, by 2050 our emissions will be down 80%! Here's how...

Determine 2% of your total household carbon footprint from the first page.

| | |
|------------------------------------|--------------------------------|
| Household Carbon Footprint (HCF) | $\times .02 = 2\%$ of your HCF |
| _____ Pounds CO ₂ /year | _____ (2% this is your goal) |

♦ Below are examples of carbon *reducing actions*, what strategies might work for you? Place a check mark next to the actions your family could or would commit to do.

| ✓ | Carbon Reducing Action | Carbon Savings |
|---|---|--|
| | Cut your shower time 3 minutes every day | 715 pounds of CO ₂ /year ³ |
| | Hang your clothes to dry in warm weather | 700 pounds of CO ₂ /year ² |
| | Cut 10 miles of driving each week | 2,395 pounds CO ₂ /year ³ |
| | Cut 10 minutes of idling time each day | 1,612 pounds CO ₂ /year ³ |
| | Replace 2-60 watt light bulbs with CFLs | 165 pounds of CO ₂ /year ³ |
| | Turn Off/Unplug Electric Appliances: | |
| | Television (2.5 hours less each day) | 100 pounds CO ₂ /year |
| | 2 - 60 watt lights (2 hours less each day) | 80 pounds CO ₂ /year |
| | Fan (8 hours less each day) | 132 pounds CO ₂ /year |
| | Computer/Monitor (1 hour less each day) | 37.7 pounds CO ₂ /year |

♦ To calculate the carbon released from home appliances - read the *watt rating* on the UL nameplate and calculate the potential carbon emissions with the equation below.

$$(\text{Wattage}) \div (1000 \text{ kW/W}) \times (\text{hours used/year}) \times (.9 \text{ lb CO}_2/\text{kWh}) = \text{pounds of CO}_2/\text{year}$$

Add up the carbon savings you've chosen to reduce your carbon footprint.....

TOTAL REDUCTION: _____ pounds CO₂ reduced/year

Is this equal to your goal of 2% of your total household carbon footprint?

Would you be able and willing to make these changes?

1) <http://www.eia.doe.gov/oiaf/1605/coefficients.html>

2) <http://www.climatecrisis.net/takeaction/whatyoucando/>

3) Maine DEP Air Quality Bureau